Draft
12 July 1967

25X1 [redacted]

Number of Targets Collected in FY 1966 and FY 1967 by Various Collectors

Table I is provided to give the number of missions and number of targets associated with Black Shield, Trojan Horse, Blue Springs, 25X1 [redacted] for FY 1966 and FY 1967.

The numbers of missions indicated in this table are straightforward. A mission is easily defined and the various missions are simply summed up. Unfortunately, the numbers of targets shown in various categories are not clearly defined. 25X1

		No. Missions/Yr.	Total Targets/Yr.	Avg. No. Targets/Mission
FY 1966	[redacted]			
	Blue Springs	45	1305**	29
	Trojan Horse	247	8151**	33
FY 1967	25X1 [redacted]			
	Blue Springs	79	4110**	52
	Trojan Horse	178	5696**	32
	Black Shield	3*	429*	143*

* Based on one month's operation
** Extrapolation from one month's data

Table I. Number of Targets Collected, by Collector, in FY 1966 and FY 1967

USAF review(s) completed.

Basically, the ambiguity in the target numbers is a result of the difficulty in defining a target. Also, the various collection systems are flown against predetermined targets for the most part. Often, the targets considered to have been collected at the end of a mission are, at most, those against which the vehicle explicitly flew. Thus, the target numbers shown in the table may contain some human bias since humans programmed the pre-flight target requirements. In other words, the number of targets collected by any one system may not truly represent the system's actual target collection capability.

A bias similar to the one discussed immediately above can also be discussed. It may be that one collector flies against an area that has a high target density (i.e., number of targets per unit area) while a second collector operates over a low target density area. Thus, even without deciding in advance which targets will be examined after collection one can bias the total number of targets recorded by having several vehicles each flying against differing target density areas.

The above discussed biases can be removed if one has access to the proper adjustment factors. Such correction would no doubt be very difficult, however, because it would require using some uniform definition of a "target" for the various collectors and then arriving at the target densities for the various areas.

The target numbers should also be viewed with the following consideration. The various collectors are in many ways supplementary

and not competing systems. For example, a drone is a good collector against heavily defended areas in order to not risk loss of a pilot, equipment, etc. In addition, a drone can fly under cloud cover. Thus, a comparison of various numbers of targets per mission may be misleading since one collector may have a low number, but may be the only sensible collector of those few targets.

The numbers in the above table represent both first and second phase reporting. First phase reporting refers to the field reports. Second phase reports are considered to be generated by NPIC. In certain instances, first phase and second phase reporters may not define a "target" in the same way. In general, first phase reports tend to cite more targets for a given mission than do second phase reports. However, for the numbers in the above table it is not entirely clear which numbers are a result of which reporting phase. Some numbers are probably a result of both phases.

In regards to Black Shield one could project the data in the table to a collection effort of one full year. It will be assumed that three vehicles will be operational for Black Shield and that each vehicle can fly three missions per month. This results in 108 missions per year. Assuming that 143 targets per mission are collected (from Table I), a total of about 15,444 targets collected per year can result. It is

25X1 interesting to note that [redacted] Blue Springs, and Trojan Horse,
25X1 combined, observed [redacted] targets in FY 1966 and [redacted] targets in 25X1
FY 1967.

Of course, many other factors must be taken into account to fairly compare the effectiveness of various collection systems. Factors must be taken into account such as target density in the area covered by the collector and similar items already discussed as well as the various system parameters for collectors such as range, camera resolution, flexibility of the vehicle's movements, speed of the vehicle,
25X1 swath width, [redacted] maximum film load, etc.

The best evaluation of the effectiveness of the collectors available will no doubt be a study that utilizes:

1. The historical number of targets collected for past years.
2. The existing (and future) system parameters associated with the various collectors (including, of course, costs)

DRAFT
12 July 1967

25X1 [redacted]

MEMORANDUM FOR: D/DCI/NIPE

SUBJECT: The DRONE Issue

1. The Consolidated Intelligence Program (CIP) Review Group is scheduled to determine a course of action regarding programming of drone aircraft in FY 69 on 11 July 1967.

2. The key issue is should the 147 Drone [redacted] 25X1

25X1 [redacted] be simultaneously funded in FY 69? If so, what is the most advantageous level of expenditure for the two programs?

3. Based on a brief review of the two programs the following information is considered to describe the key systems capability and problems:

a. The 147 Drone, subsonic high and low altitude capability, has had the following mission record:

Year	Launched	Recovered	Lost
1964	19	10	9
1965	65	39	26
1966	104	57	47
1967	77	43	34
TOTAL	265	149	116

b. It was planned to phase the 147 Drone out as the

25X1 [redacted] became operational.

25X1 c. The [redacted] drone, high altitude capability, date of initial operational capability is currently projected to slip three months (IOC = late 1968).

25X1 d. The [redacted] has had significant cost over runs (60%).

e. The USAF has requested [redacted] to fund the 25X1 two drone programs for FY 1969 - 1973.

f. The principal area of deployment for the two drone systems is North Vietnam.

4. It is considered that the most significant justification for continuing both drone systems are as follows:

a. Maintain the 147 system as insurance against

25X1 [redacted] scheduled slippage or unsuccessful operational deployment.

b. Maintain the 147 as adjunct capability which could be used to cover other areas in the event of concurrent crises.

5. It is concluded, based on anticipated duplication and on the high funding requirements, that the drone issue requires a thorough analysis prior to definition of FY 1969 program requirements. It is recommended that a photographic systems cost effectiveness study be conducted and that scope of this study be sufficiently broad to include the 147, [redacted] and other 25X1 methods of covering the same area. The basis for this recommendation is

as follows:

a. The Tagboard Drone appears to be another system which could potentially duplicate both 147 and [redacted] 25X1 [redacted] capability. 25X1

b. The OXCART has been operationally deployed over North Vietnam with great success. As seen in the table below, on a cost per mission, either the Trojan Horse or Black Shield have at least a two to one advantage compared to the 147 or the [redacted] 25X1 [redacted] On a cost per target reported basis the Black Shield program shows a clear cut overall advantage of three to one over the Trojan Horse and between five and nine to one over the 147 and [redacted] systems. 25X1 25X1

Relative Comparison of Tactical Collection Systems

(Cost = $ x Thousands)

25X1

[redacted]

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